AUTHOR INDEX

Adamson, T.P., see Hempleman, S.C., 1

Allen, P.S., see Jones, R.L., 11

Altose, M., see Supinski, G., 141

Ar, A. and Pointkewitz, Y., Nest ventilation explains gas composition in the nestchamber of the European bee-eater, 407

Badeer, H. S. and Hicks, J. W., Hemodynamics of vascular 'waterfall': is the analogy justified?,

Bairam, A., see Marchal, F., 183

Barstow, T.J., Landaw, E.M., Springer, C. and Cooper, D.M., Increase in bicarbonate stores with exercise, 231

Bartlett, D., Jr., see Ukabam, C.U., 157

Biggs, D., see DeLisle, S., 131

Bisgard, G.E., see Weizhen, N., 37

Bonora, M., see Gautier, H., 309

Branco, L.G.S., Glass, M.L. and Hoffmann, A., Central chemoreceptor drive to breathing in unanesthetized toads, *Bufo paracnemis*, 195

Bundy, R., see Supinski, G., 141

Burger, R.E., see Hempleman, S.C., 1

Cherniack, N.S., see Mitra, J., 49

Clancy, R.L., see Gonzalez, N.C., 243

Cooper, D.M., see Barstow, T.J., 231

Crance, J.P., see Marchal, F., 183 Cunningham, D.J.C., see Painter, R., 293

Daristotle, L., see Weizhen, N., 37

DeLisle, S., Biggs, D., Wang, A. and Martin, J. G., Effects of prostaglandin E₂ on ganglionic transmission in the guinea pig trachea, 131

Dev, N.B., see Mitra, J., 49

Di Giulio, C., see Marchal, F., 183

DiMarco, A.F., see Supinski, G., 141

Douse, M.A. and Mitchell, G.S., Effects of vagotomy on ventilatory responses to CO₂ in alligators, 63

Douse, M.A. and Mitchell, G.S., Episodic breathing in alligators: Role of sensory feedback, 77 Engwall, M.J.A., see Weizhen, N., 37

Farhi, L.E., see Sheehan, D.W., 357

Gautier, H., Bonora, M. and Lahiri, S., Control of metabolic and ventilatory responses to cold in anesthetized cats, 309

Glass, M.L., see Branco, L.G.S., 195

Gonzalez, N.C. and Clancy, R.L., Mechanism of the effect of alkalosis on maximum oxygen uptake in hypoxic exercise, 243

Gunst, S.J., see Lau, H.-P., 255

Guz, A., see Shea, S.A., 275

Haouzi, P., see Marchal, F., 183

Hempleman, S.C., Powell, F.L., Adamson, T.P. and Burger, R.E., CO₂ and avian eggshell formation at high altitude, 1

Hicks, J.W., see Badeer, H.S., 205

Hochachka, P.W., see Jones, R.L., 11

Hoffmann, A., see Branco, L.G.S., 195

Hoppeler, H., see Weibel, E. R., 325 Hussein, F., see Supinski, G., 141

Jones, R.L., Man, S.F.P., Matheson, G.O., Parkhouse, W.S., Allen, P.S., McKenzie, D.C. and Hochachka, P.W., Overall and regional lung function in Andean natives after descent to low altitude. 11

Jones, R.M., see Tenney, S.M., 397

Jouin, C., see Toulmond, A., 429

Kanno, T., see Matsumoto, S., 165

Karla, W., Shams, H., Orr, J. A. and Scheid, P., Effects of the thromboxane A₂ mimetic, U46,619, on pulmonary vagal afferents in the cat, 383

Katayose, D., see Ohe, M., 105

Klocke, R.A., see Sheehan, D.W., 357

Knuth, S.L., see Ukabam, C.U., 157

Lahiri, S., see Gautier, H., 309

Lahiri, S., see Marchal, F., 183

Landaw, E.M., see Barstow, T.J., 231
Lau, H.-P., Sayiner, A., Warner, D.O., Gunst,

S.J. and Rehder, K., Halothane alters the response of isolated airway smooth muscle to carbon dioxide, 255

Lenfant, C., see Roth, C.A., 269

Man, S.F.P., see Jones, R.L., 11

Marchal, F., Bairam, A., Haouzi, P., Crance, J. P., Di Giulio, C., Vert, P. and Lahiri, S., Carotid chemoreceptor response to natural stimuli in the newborn kitten, 183

Martin, J.G., see DeLisle, S., 131

Matheson, G.O., see Jones, R.L., 11

Matsumoto, S., Kanno, T., Yamasaki, M., Nagayama, T. and Shimizu, T., Pulmonary C-fibers elicit both apneusis and tachypnea in the rabbit, 165

Mattsoff, L., see Nikinmaa, M., 219

Maxime, V., see Thomas, S., 91

McKenzie, D.C., see Jones, R.L., 11

Mitchell, G.S., see Douse, M.A., 63

Mitchell, G.S., see Douse, M.A., 77

Mitra, J., Dev, N. B., Romaniuk, J. R., Trivedi, R., Prabhakar, N. R. and Cherniack, N. S., Cardiorespiratory changes induced by vertebral artery injection of sodium cyanide in cats, 49

Nagayama, T., see Matsumoto, S., 165

Nicholas, T.E., see Ward, H.E., 115

Nikinmaa, M. and Mattsoff, L., Effects of oxygen saturation on the CO₂ transport properties of *Lampetra* red cells, 219

Ogata, M., see Ohe, M., 105

Ohe, M., Ogata, M., Katayose, D. and Takishima, T., Hypoxic contraction of pre-stretched human pulmonary artery, 105

Orr, J. A., see Karla, W., 383

Painter, R. and Cunningham, D.J.C., Analyses of human respiratory flow patterns, 293

Parkhouse, W.S., see Jones, R.L., 11

Pennec, Y., see Thomas, S., 91

Perry, S.F., see Thomas, S., 91

Püper,, J., Diffusion-perfusion inhomogeneity and alveolar-arterial O₂ diffusion limitation: Theory, 349

Piontkewitz, Y., see Ar, A., 407

Pizarro, J., see Weizhen, N., 37

Powell, F.L., see Hempleman, S.C., 1 Powell, F.L., see Woodson, G.E., 25 Prabhakar, N.R., see Mitra, J., 49

Rehder, K., see Lau, H.-P., 255

Romaniuk, J. R., see Mitra, J., 49

Roth, C.A. and Lenfant, C., Funding biomedical research: A common gound for concern? 269

Sayiner, A., see Lau, H.-P., 255

Scheid, P., see Karla, W., 383

Shams, H., see Karla, W., 383

Shea, S. A. and Guz, A., Personnalité ventilatoire
- An overview, 275

Sheehan, D. W., Klocke, R.A. and Farhi, L.E., Pulmonary hypoxic vasoconstriction: How strong? How fast? 357

Shimizu, T., see Matsumoto, S., 165

Springer, C., see Barstow, T.J., 231

Supinski, G., DiMarco, A. F., Hussein, F., Bundy, R. and Altose, M., Analysis of the contraction of series and parallel muscles working against elastic loads, 141

Takishima, T., see Ohe, M., 105

Taylor, C.R., see Weibel, E.R., 325

Tenney, S.M., and Jones, R.M., Water balance and lung fluids in rats at high altitude, 397

Thomas, S., Perry, S. F., Pennec, Y. and Maxime, V., Metabolic alkalosis and the response of the trout, Salmo fario, to acute severe hypoxia, 91

Toulmond, A. and Jouin, C., Seawater salinity and blood acid-base balance in the lugworm, Arenicola marina (L.), 429

Trivedi, R., see Mitra, J., 49

Truchot, J.P., Acid-base changes on transfer between sea- and freshwater in the Chinese crab, Eriocheir sinensis, 419

Ukabam, C. U., Knuth, S. L. and Bartlett, D., Jr., Phrenic and hypoglossal neural responses to cold airflow in the upper airway, 157

Vert, P., see Marchal, F., 183

Wang, A., see DeLisle, S., 131

Ward, H. E. and Nicholas, T. E., Effect of artificial ventilation and anaesthesia on surfactant turnover in rats, 115

Warner, D.O., see Lau, H.-P., 255

Weibel, E.R., Taylor, C.R. and Hoppeler, H., Variations in function and design: Testing symmorphosis in the respiratory system, 325

Weizhen, N., Engwall, M.J.A., Daristotle, L., Pizarro, J. and Bisgard, G.E., Ventilatory effects of prolonged systemic (CNS) hypoxia in awake goats, 37 Widdicombe, J.G., Chemoreceptor control of the airways, 373

Woodson, G.E. and Powell, F.L., Effects of hypoxia and hypercapnia on cricothyroid muscle response to airway pressure, 25

Yamasaki, M., see Matsumoto, S., 165



SUBJECT INDEX

Acid-base buffering, blood (lamprey), 219 water salinity (Chinese crab), 419 Acid-base balance alkalosis, hypoxic response, 91, CSF, 195 seawater salinity (Arenicola marina), 429 Aganthans lamprey (Lampreta fluviatilis), 219 Airways resistance, chemoreceptor control, 373 resistance, cricothyroid muscle, 25 smooth muscle, halothane, CO2, 255 submucosal gland secretion, chemoreceptors, 373 tracheal muscle, 131 Alkalosis maximum O2 uptake, 243 Altitude egg shell conductance, 1 Alveolar gas exchange models, heterogeneity, 349 Amphibian toad, 195 Anesthesia surfactant release, 115 Antidiuretic hormone hypoxia, 397 Apneusis pulmonary C-fibers, 165

Bicarbonate stores, rest, exercise, 231

Birds

European bee-eater (*Merops apiaster*), 407

hen, 1

Blood

O₂, CO₂ transport (lamprey), 219

Blood flow

pulmonary, eucapnic vs hypocapnic hypoxia,

357 Bronchial smooth muscle halothane, CO₂, 255 Bronchoconstriction chemoreceptors, 373 Carotid bodies ventilation, thermogenesis, hypoxia, 309

Cerebrospinal fluid
acid-base, chemosensitivity, 195
Chemoreceptors
carotid, O₂, CO₂ (kitten), 183
central (toad), 195
central, response during brain hypoxia, 37
control of airways, 373
CO₂
stores, rest, exercise, 231
Control of breathing
central chemogreceptors, 195

stores, rest, exercise, 231

Control of breathing
central chemoreceptors, 195
central hypoxia, 49

CO₂ sensitivity (reptile), 63, 77
pattern, 275
pattern, chemical drives, exercise, 293

Development sensitivity carotid body (kitten), 183 Diffusing capacity lung, 325 lung, distribution to perfusion, 349

Egg
O₂ uptake (European bee-eater), 407
shell conductance, 1
Elastic load
respiratory muscles, 141

hypoxic pulmonary vasoconstriction, 105 Exercise hypoxic vs normoxic, maximum O₂ uptake, 243 pattern of breathing, 293

Fish trout, 91 Fluid balance hypoxia, 397 Funding

Endothelium

Funding biomedical research, 269 Haldane effect lamprey, 219

Halothane

airways smooth muscle, 255

Hemoglobin

CO2 transport (lamprey), 219

Heterogeneity

D/O in alveolar lungs, 349

pulmonary blood flow, hypoxia, 357

High altitude

residents, lung function upon descent, 11

High frequency oscillation surfactant release, 115

Hypercapnia

airway resistance, 25

Hypocapnia

egg shell conductance, I

hypoxic pulmonary vasoconstriction, 357

Hypoxia

airway resistance, 25

carotid chemoreceptors (kitten), 183

CNS, sympathetic stimulation, 49

fluid balance, ADH, 397

high altitude pulmonary edema, 397

maximum O2 uptake, 243

prolonged systemic, ventilatory effects, 37

pulmonary vasoconstriction, 357

response during alkalosis, 91

thermogenesis, carotid bodies, 309

Hypoxic pulmonary vasoconstriction

dependence on voltage-gated Ca2+ channels,

Incubation

egg (European bee-eater), 407

Invertebrates

Chinese crab (Eriocheir sinensis), 419

lugworm, Arenicola marina, 429

Ion channels

Ca2+, hypoxic pulmonary vasoconstriction,

105

Ion exchange

transfer seawater freshwater (Chinese crab),

419

Kinetics

bicarbonate exchange, rest, exercise, 231

Larynx

reflex, cold air, 157

Lung function

high altitude residents, 11

Lung receptors

CO2, reptile, 63

Lung volume

overall, regional, high altitude residents, 11

Mammals

cat. 49, 157, 309

cat, rabbit, 383

dog, 25, 255

guinea pig, 131

goat, awake, 37

humans, 105, 275, 293

humans, high altitude residents, 11

kitten, 183

rabbit, 165

rat, 115, 243, 397

sheep, 357

Maximal O₂ consumption

O2 transport system, 325

Model

bicarbonate stores, rest, exercise, 231

vascular waterfall, 205

Motor nerves

cold air, upper airways, 157

Nest

ventilation (European bee-eater), 407

Osmoregulation

acid-base balance (Arenicola marina), 429

euryhaline Chinese crab, 419

Oxygen transport

function, design, 325

Pattern of breathing

individuality, 275

periodic breathing, reptile, 77

steady state, chemical drives, exercise, 293

Pharmacological agents

phenylbiguanide, 165

TxA2 mimetic, U46,619, 383

Prostaglandin

ganglionic transmission, trachea, 131

Pulmonary circulation

pressure-flow, 205

Receptors

pulmonary C-fibers, tachypnea, apneusis, 165

pulmonary stretch, TxA2, 383

Reptiles

Alligator mississippiensis, 63, 77

Respiratory muscles

cricothyroid, O₂, CO₂ effects, 25 force, series vs parallel arrangement, 141

Salinity seawater, blood acid-base balance (Arenicola marina), 429

Skeletal muscle O₂ exchange, 325

Smooth muscle airways, halothane, CO₂, 255

Surfactant release, 115 Sympathetic system central hypoxia, 49

Thermal control ventilation, varying ambient O₂, 309

Tracheal muscle contractility, PGE₂, 131

Upper airways cold air, neural responses, 157

Vagus nerve afferents, sensitivity TxA₂, 383 CO₂ sensitivity, reptile, 63 respiratory pattern, reptile, 77 Vascular resistance lung, model, 205

Ventilation thermogenesis, varying ambient O₂, 309